

Annual Peak-Flow Frequency Analysis

For more information on the contents of this documentation, see Kessler and others (2013).

**Streamgauge number and name:**

05270700 Mississippi River at St. Cloud, Minn.

**Peak-flow information:**

Number of systematic peak flows in record	23
Systematic period begins	1989
Systematic period ends	2011
Length of systematic record	23
Years without information	0
Number of historical peak flows in record	0

**Frequency analysis options:**

Method	Bulletin 17B
Skew option	STATION SKEW
Low-outlier method	Bulletin 17B Grubbs-Beck test

**Bulletin 17B systematic record analysis results:**

**Moments of the common logarithms of the peak flows:**

	Standard		
Mean	deviation	Skewness	
4.3357	0.1652	0.216	

**Outlier criteria and number of peak flows exceeding:**

Low	8535.6	0
High	54968.4	0

**Bulletin 17B Final analysis results:**

**Moments of the common logarithms of the peak flows:**

	Standard	
Mean	deviation	Skewness
4.3357	0.1652	0.216

**Annual frequency curve at selected exceedance probabilities:**

Exceedance probability	Peak estimate	Lower-95 level	Upper-95 level
0.9950	8,780	6,300	10,900
0.9900	9,500	6,970	11,600
0.9500	11,900	9,260	14,000
0.9000	13,400	10,800	15,700
0.8000	15,700	13,100	18,000
0.6667	18,200	15,600	20,700
0.5000	21,400	18,700	24,400
0.4292	22,900	20,000	26,300
0.2000	29,700	25,900	35,500
0.1000	35,600	30,400	44,300
0.0400	43,300	36,100	56,900
0.0200	49,400	40,400	67,400
0.0100	55,700	44,600	78,800
0.0050	62,300	49,000	91,100
0.0020	71,600	54,900	109,000

**Peak-flow data used in the analysis:**

Explanation of symbols and codes

-- none

K Peak affected by regulation

Water	Peak	Peak-flow
year	flow	code
1989	19,300	K
1990	16,700	K
1991	19,700	K
1992	13,700	K
1993	21,700	K
1994	23,300	K
1995	19,000	K
1996	27,300	K
1997	46,900	--
1998	16,700	K
1999	33,800	--
2000	12,500	K
2001	44,300	--
2002	22,200	K
2003	20,900	K
2004	9,750	K
2005	22,100	K
2006	20,000	K
2007	15,800	K
2008	18,800	K
2009	35,700	--
2010	29,400	K
2011	25,200	K